

Fig.1

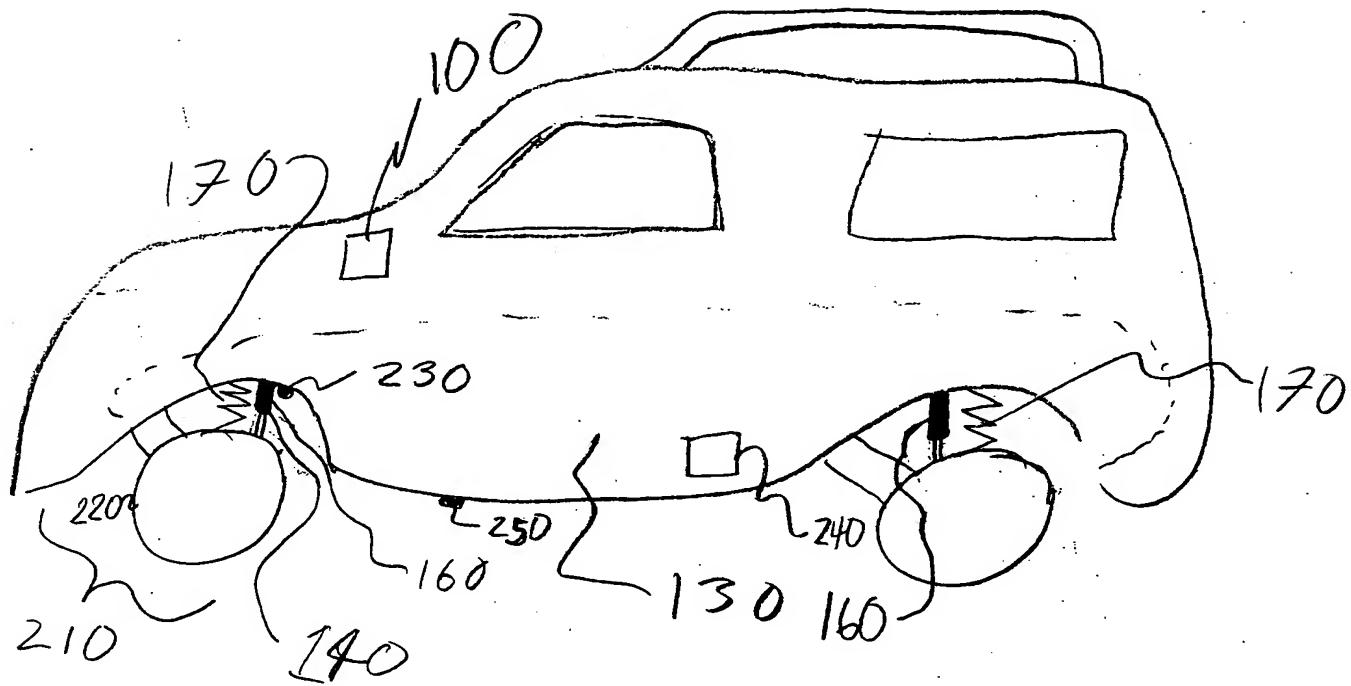


Fig. 2

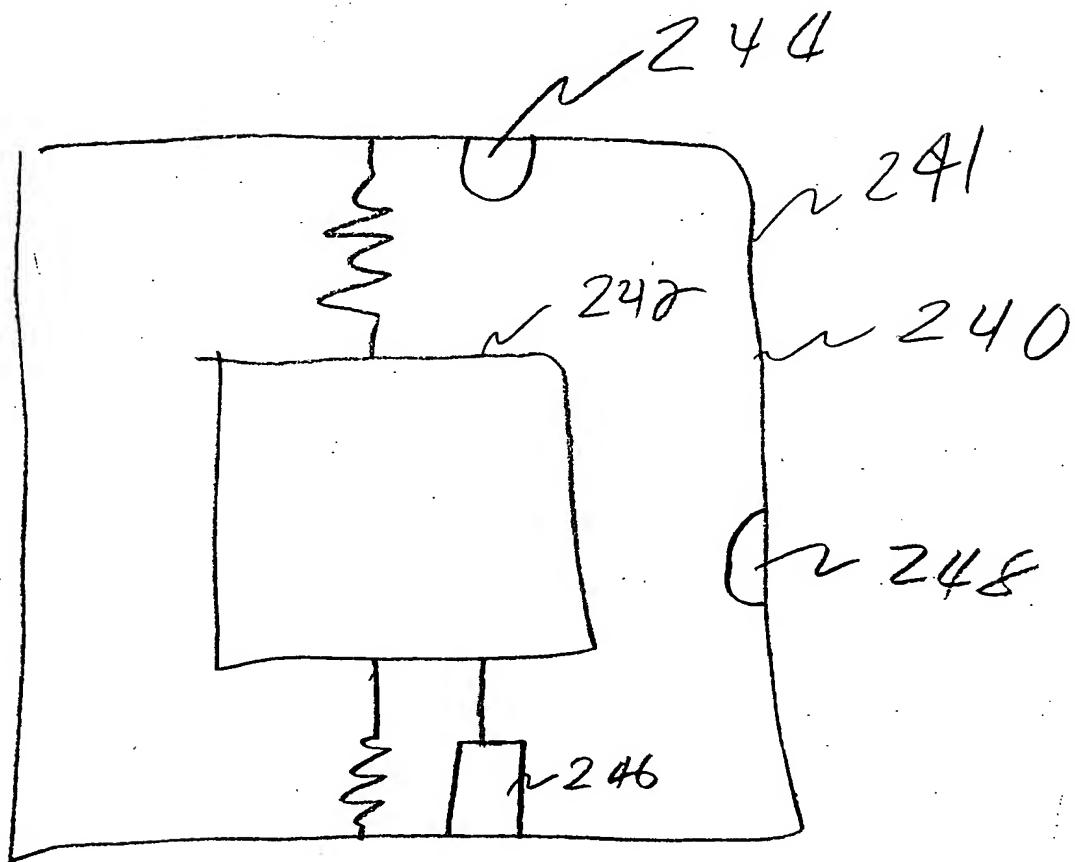


Fig. 3

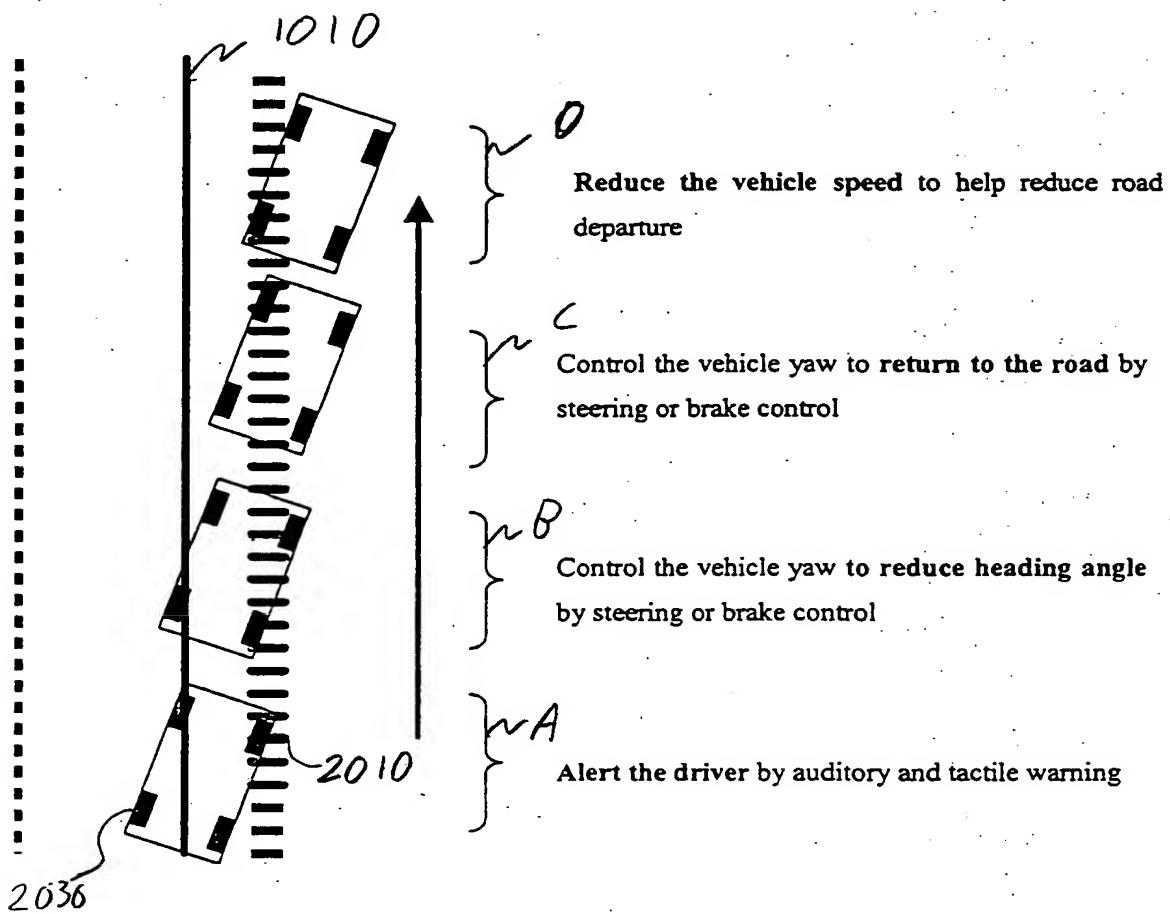
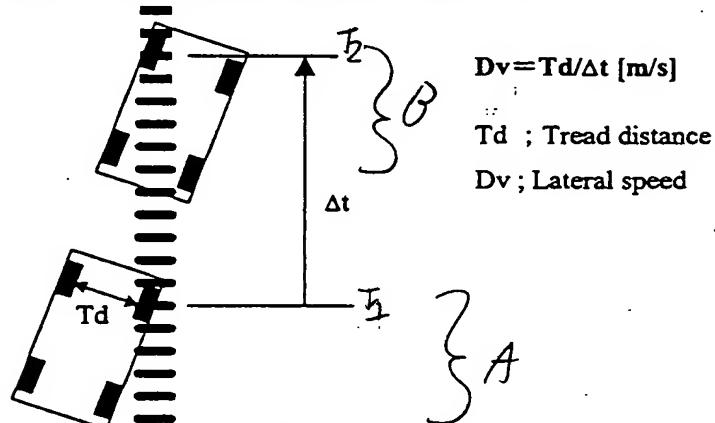


Fig. 4

Calculation of the Lateral speed at Deviation



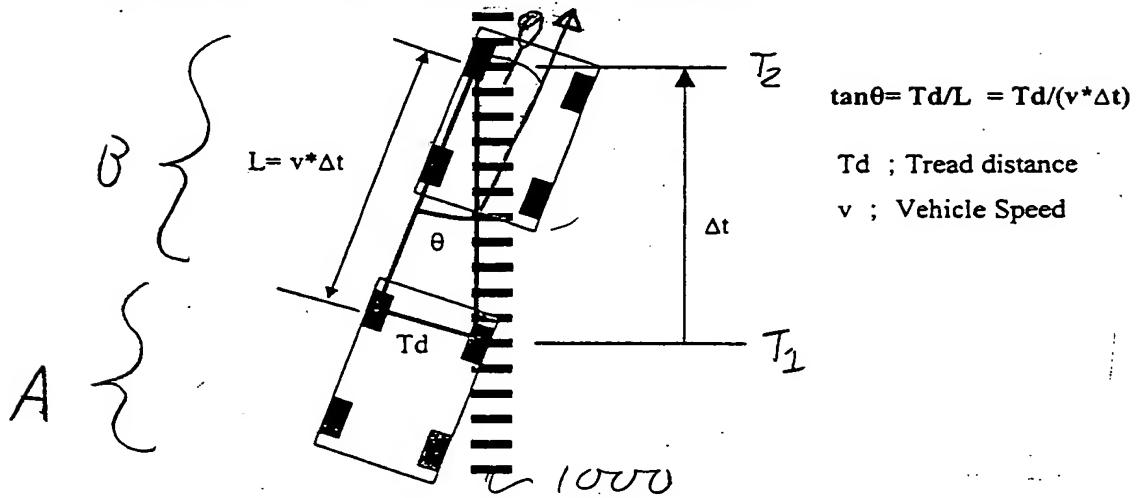
$$Dv = T_d / \Delta t \text{ [m/s]}$$

T_d ; Tread distance

Dv ; Lateral speed

Fig. 5a 1000

Calculation of the heading angle at deviation



$$\tan \theta = T_d / L = T_d / (v * \Delta t)$$

T_d ; Tread distance

v ; Vehicle Speed

Fig. 5b

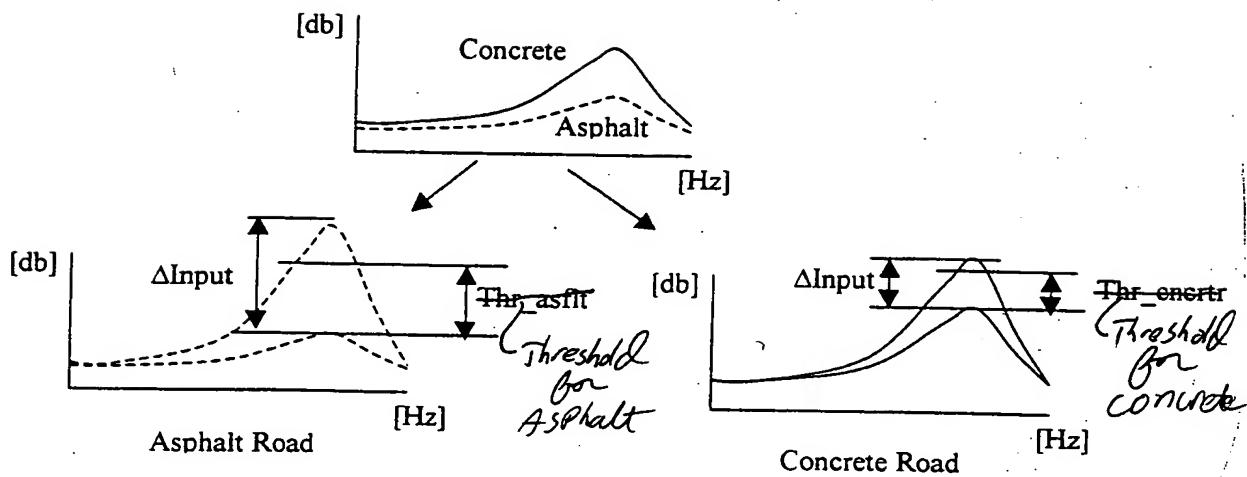


Fig. 6

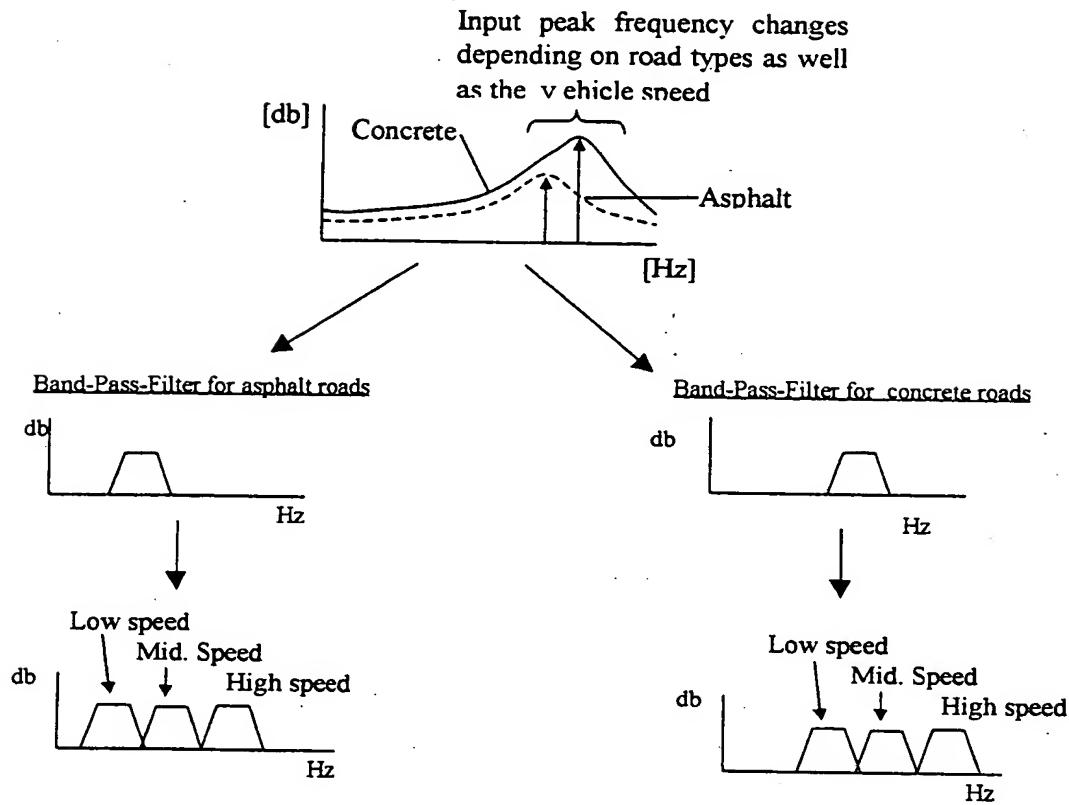
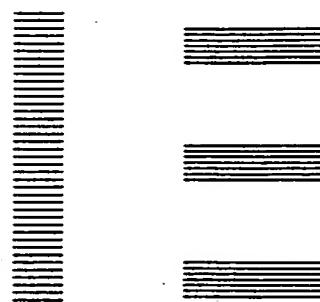


Fig. 7



Continuous RS Intermittent RS

Fig. 8

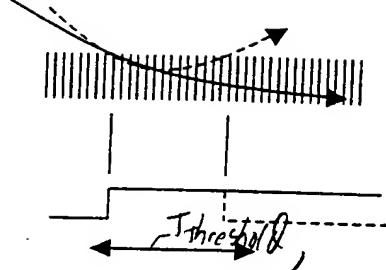


Fig. 9

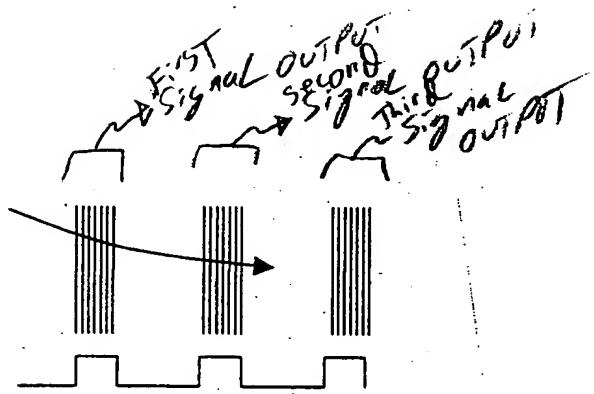


Fig. 10

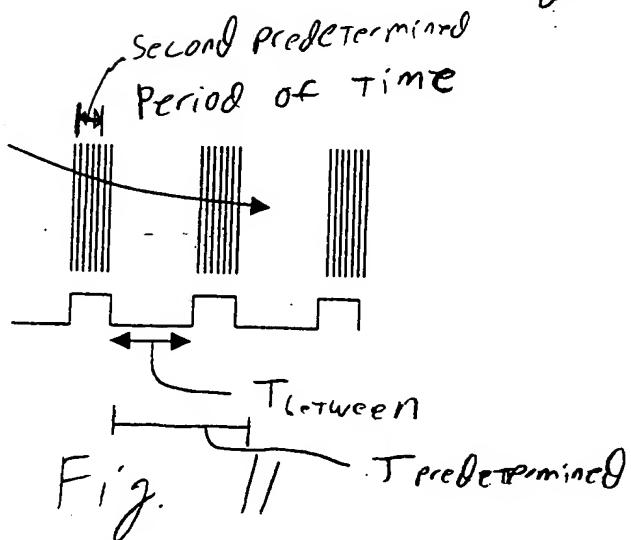
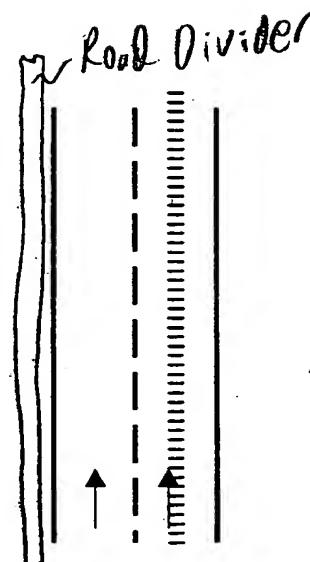
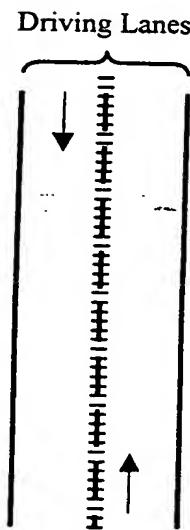


Fig. 11



Under Construction

Fig. 12



Center RS

Fig. 13

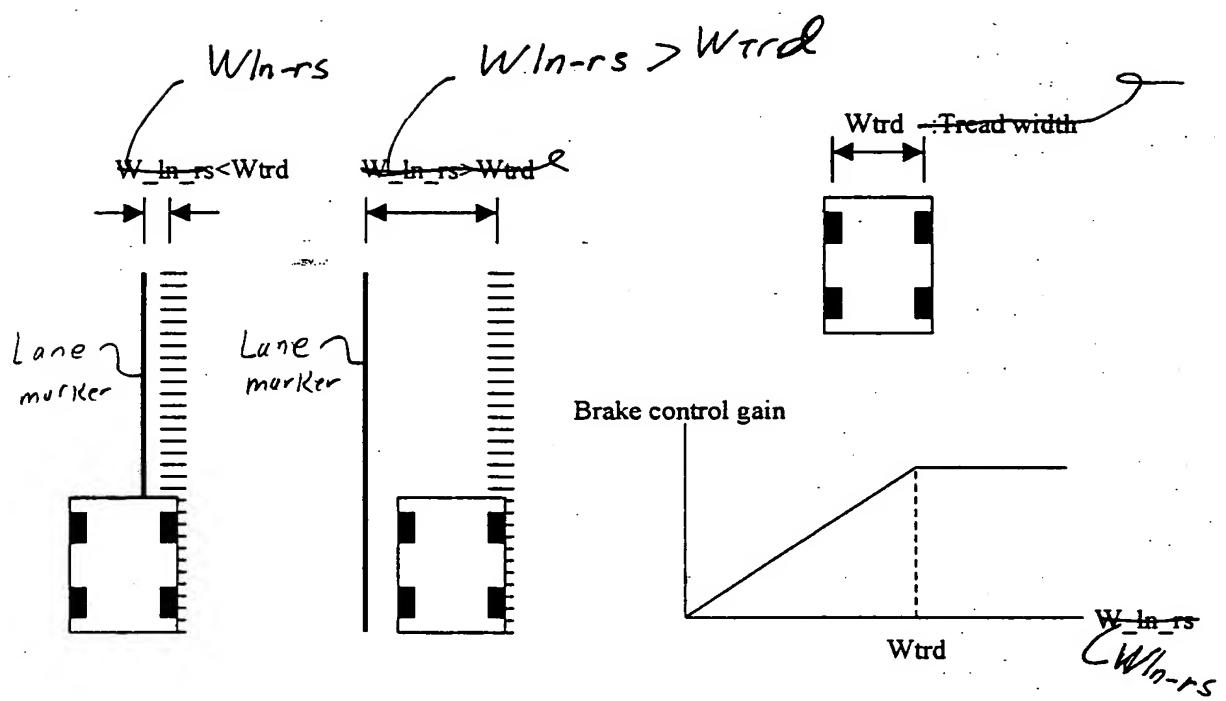


Fig. 14

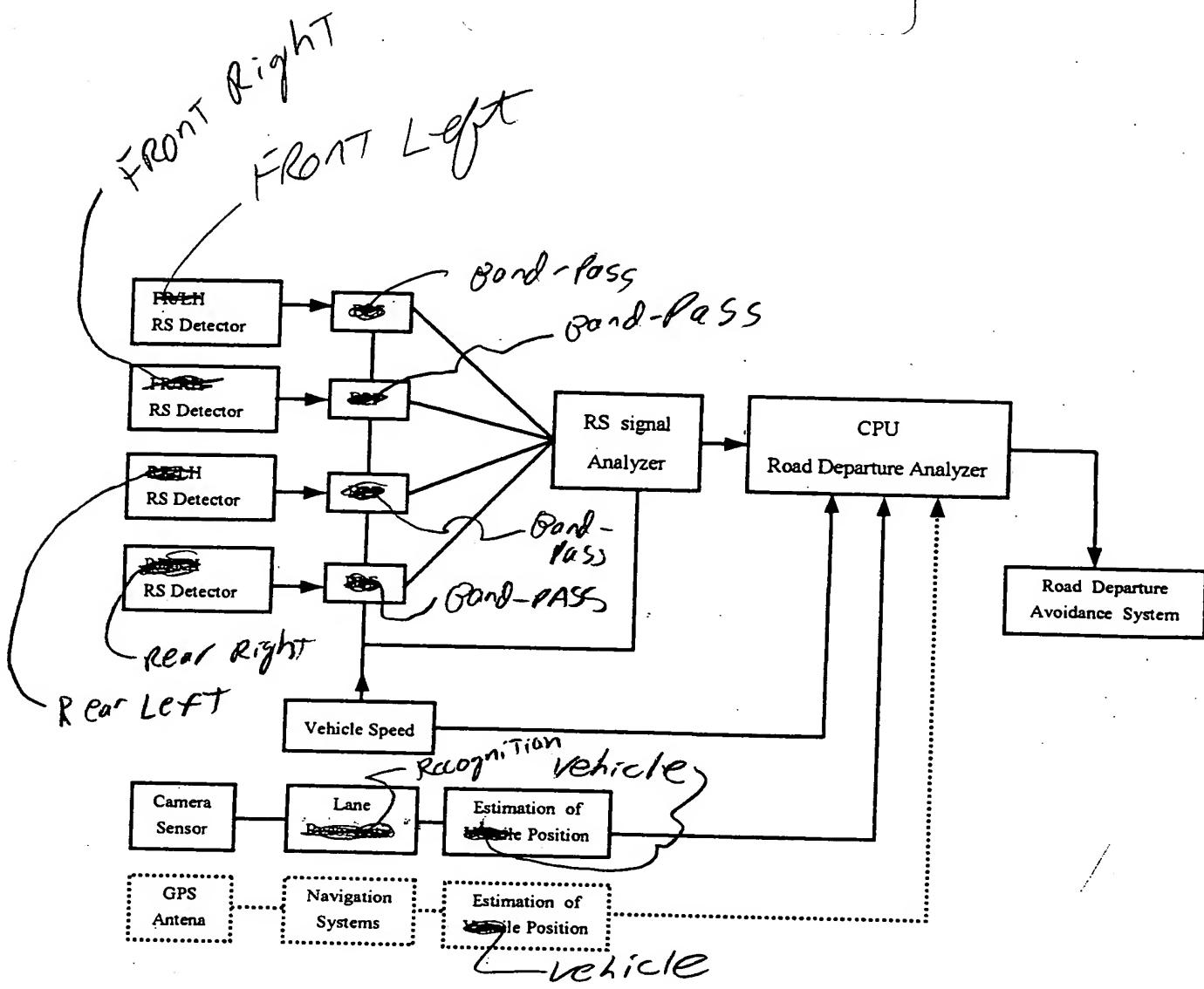


Fig. 15

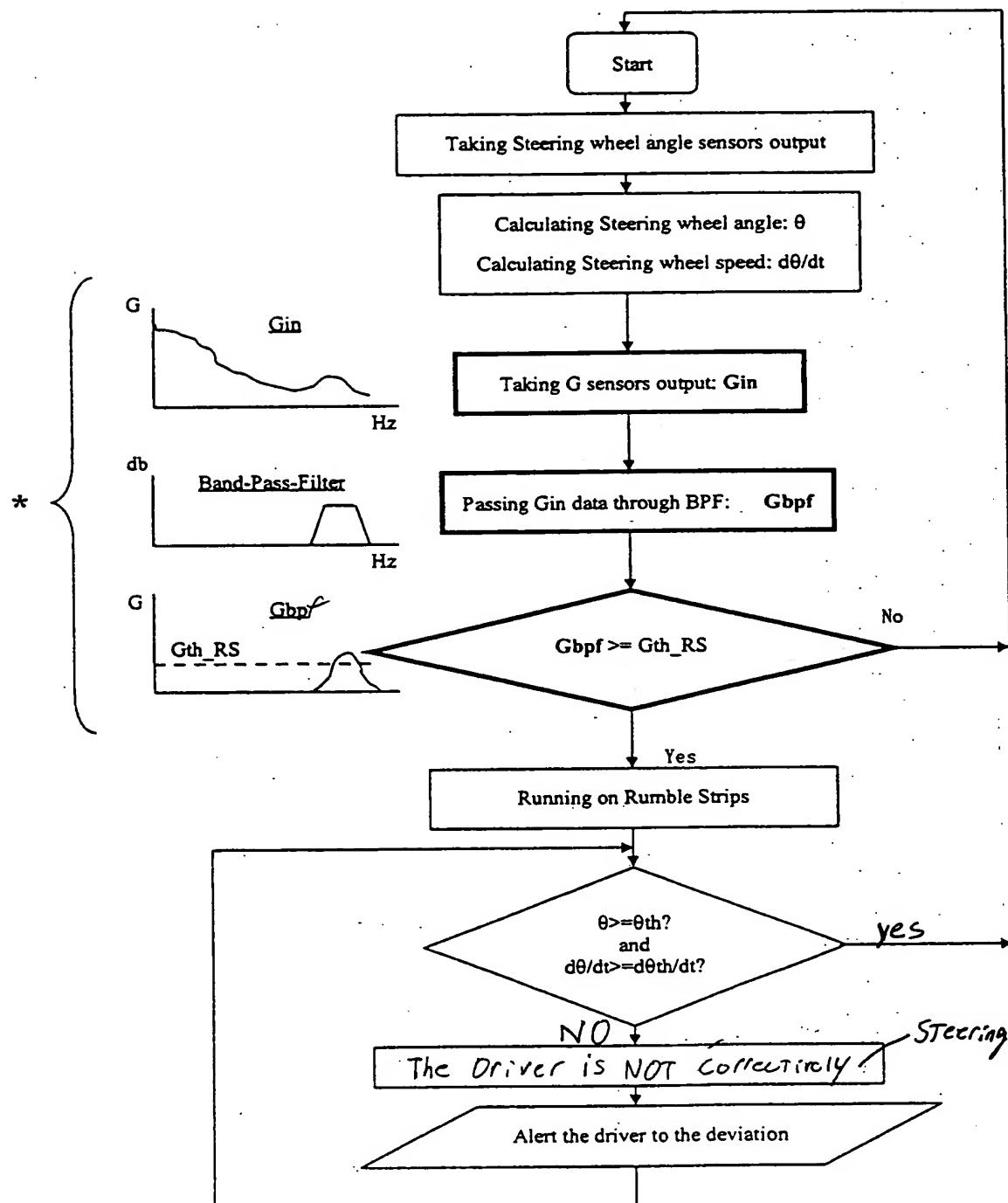


Fig. 16

Exemplary

Response

Cut-off frequencies of Band-Pass Filter in ~~response~~ to vehicle speed

The pattern of rumble strips: cycle distance : 30.48cm (1foot)

140~ km/h 128 Hz BPF#1

120~140km/h 109 Hz BPF#2

100~120km/h 91 Hz BPF#3

80~100km/h 72 Hz BPF#4

60~80km/h 55 Hz BPF#5

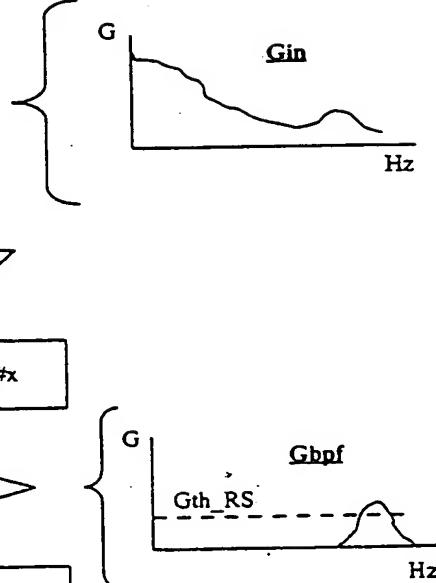
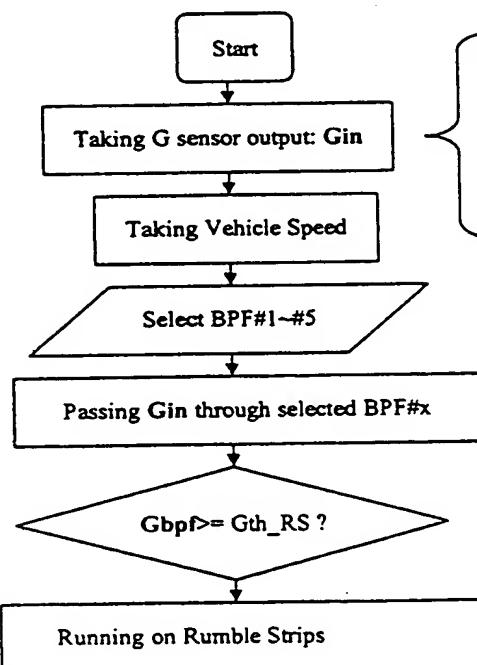
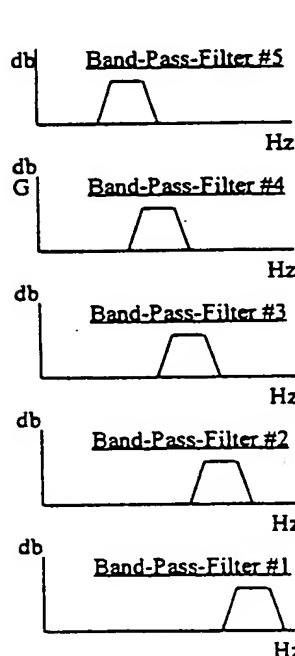


Fig. 17

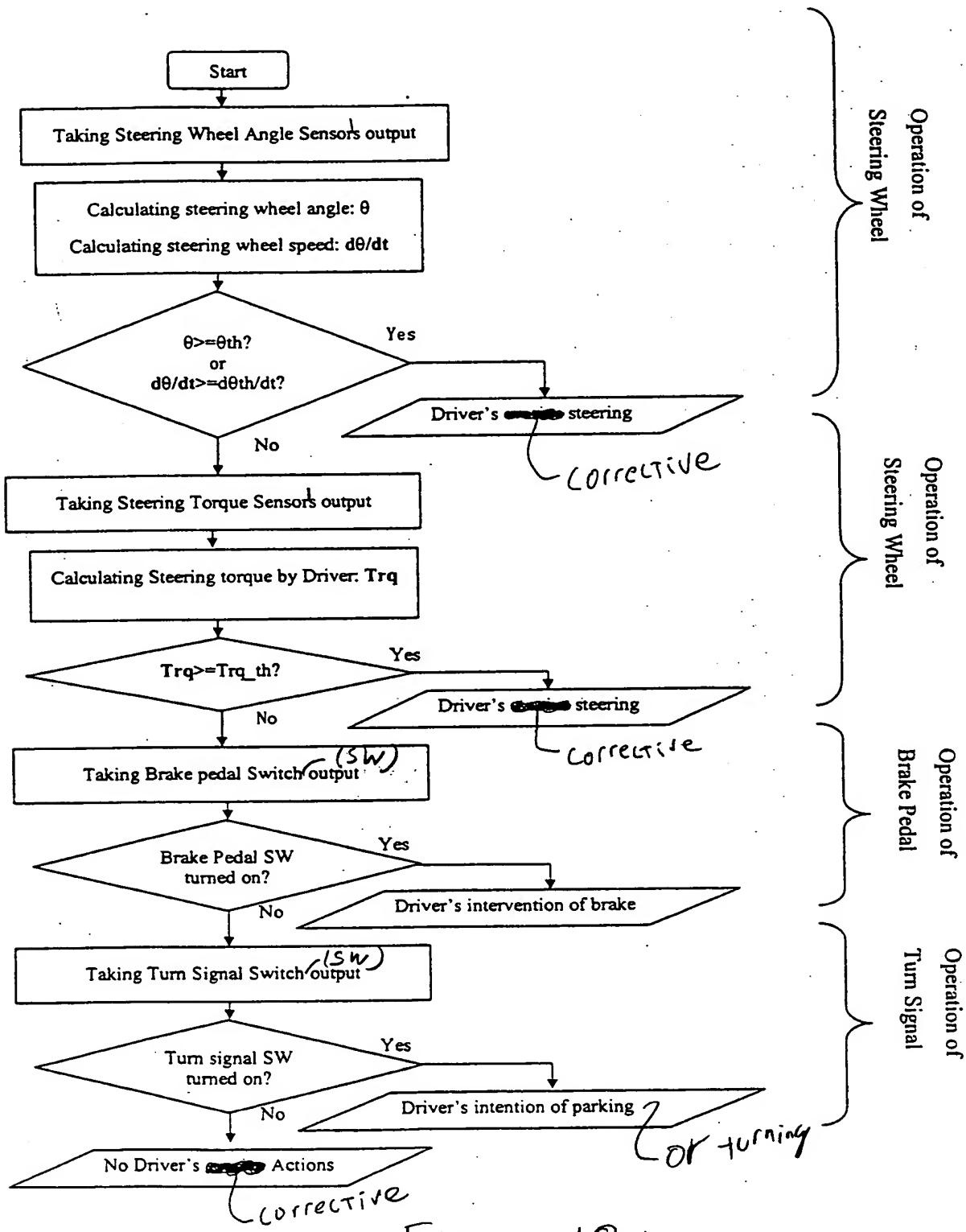


Fig. 18

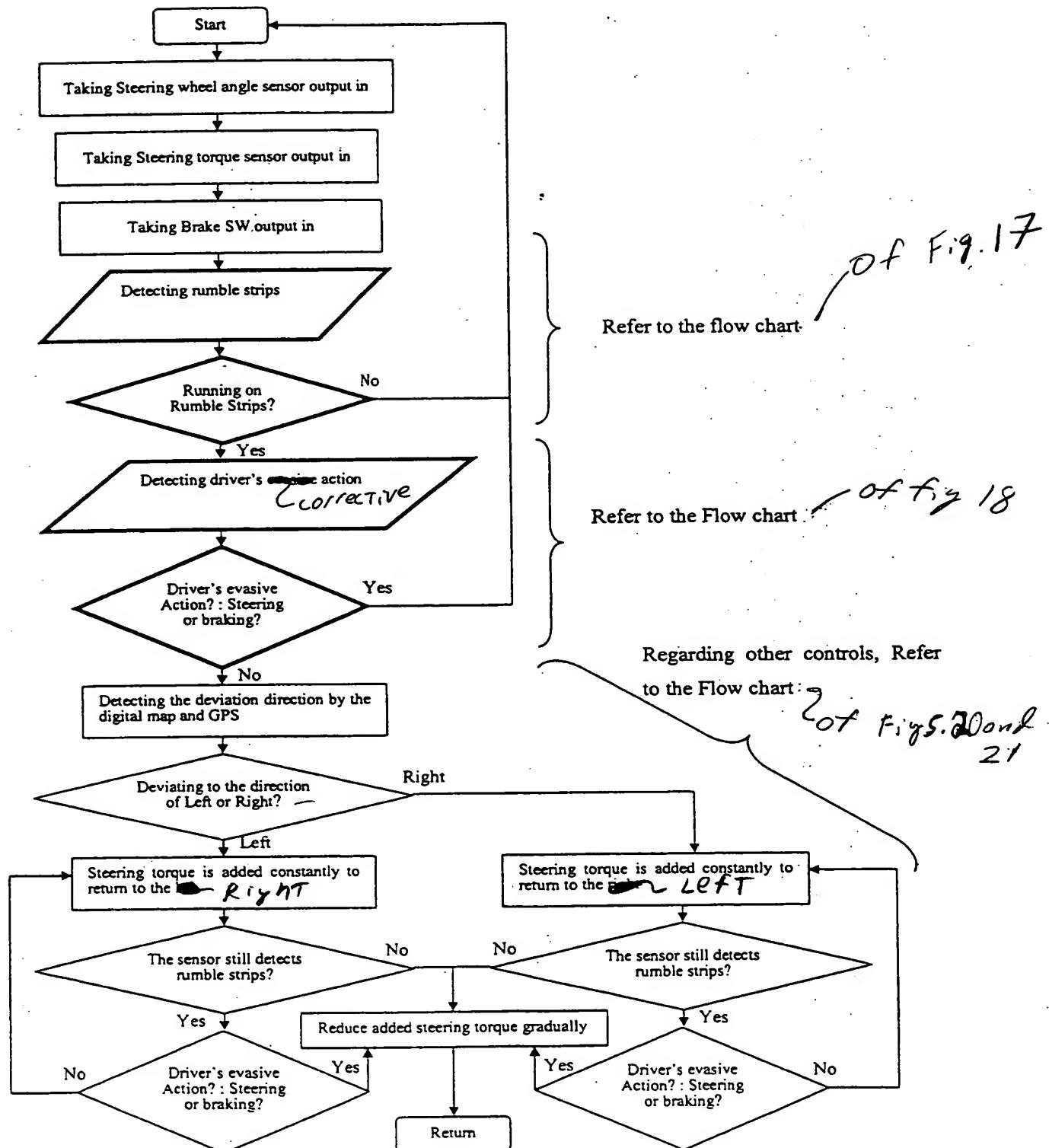


Fig. 19

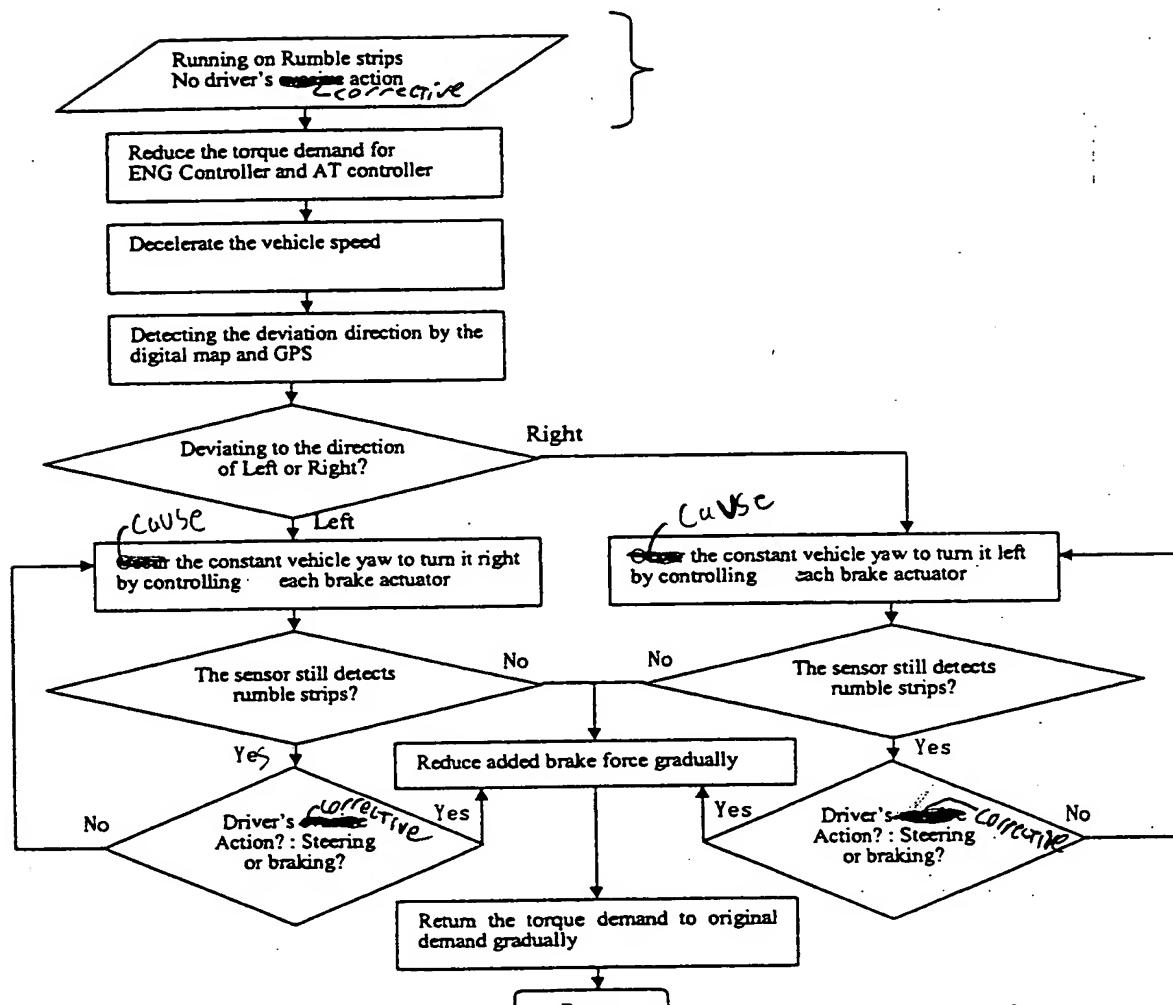


Fig. 20

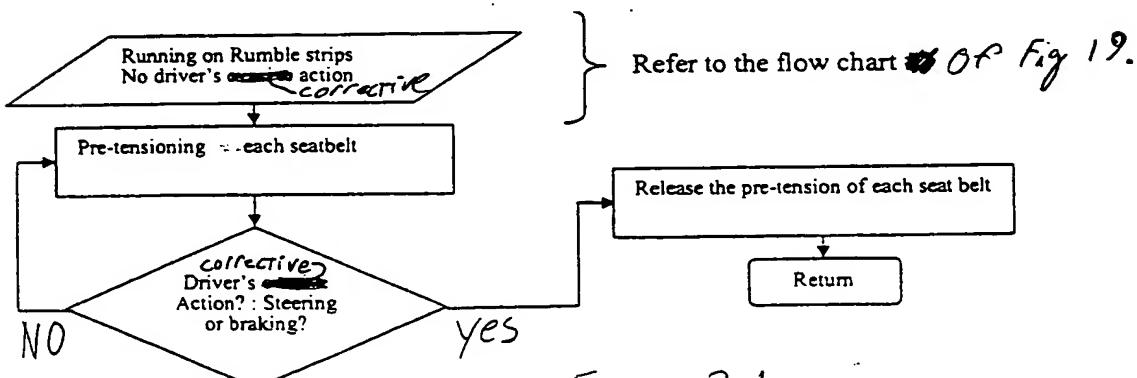


Fig. 21

Refer to the flow chart ~~20~~ or Fig. 19.

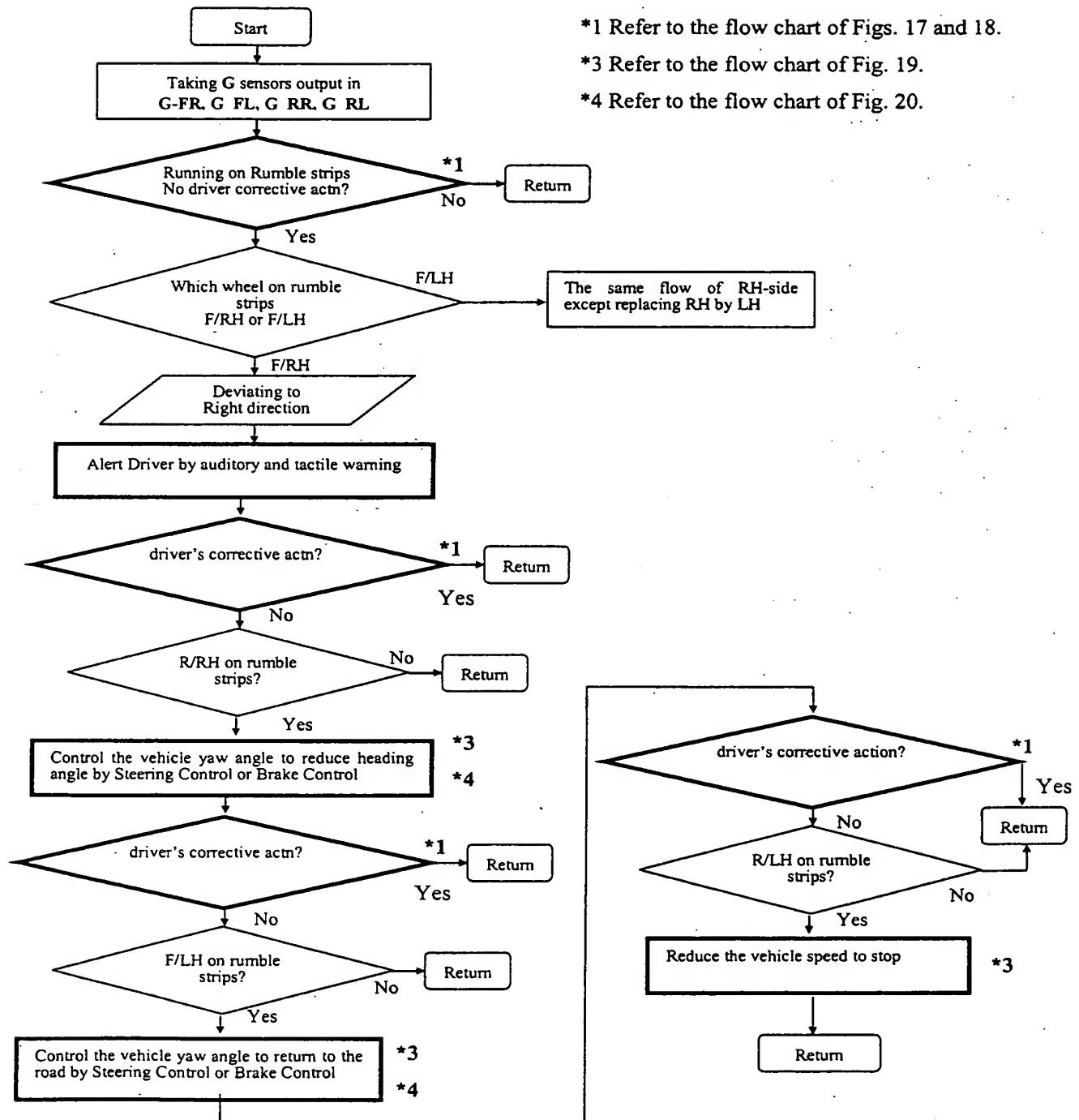


Fig. 22

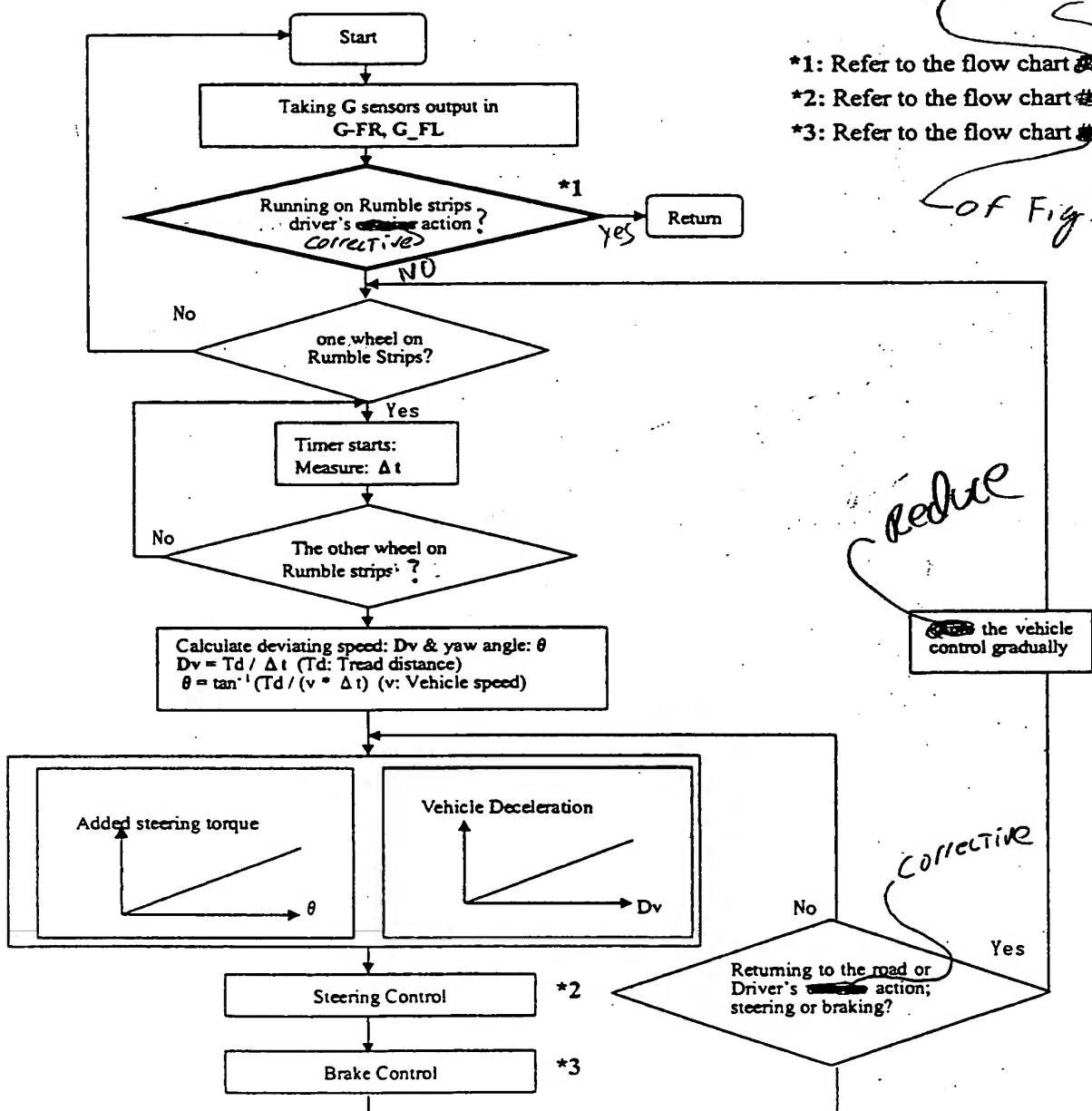


Fig. 23

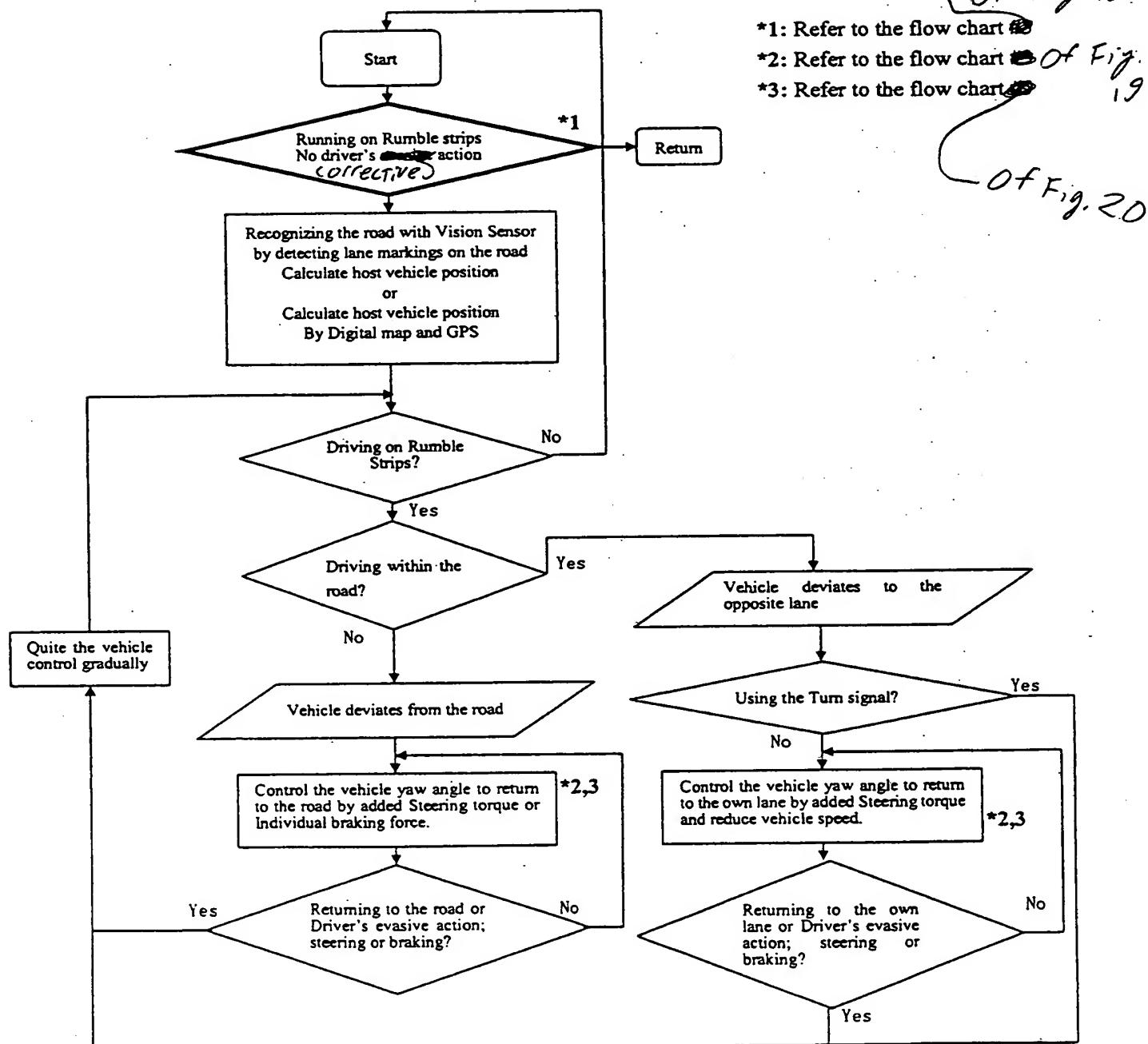


Fig. 24

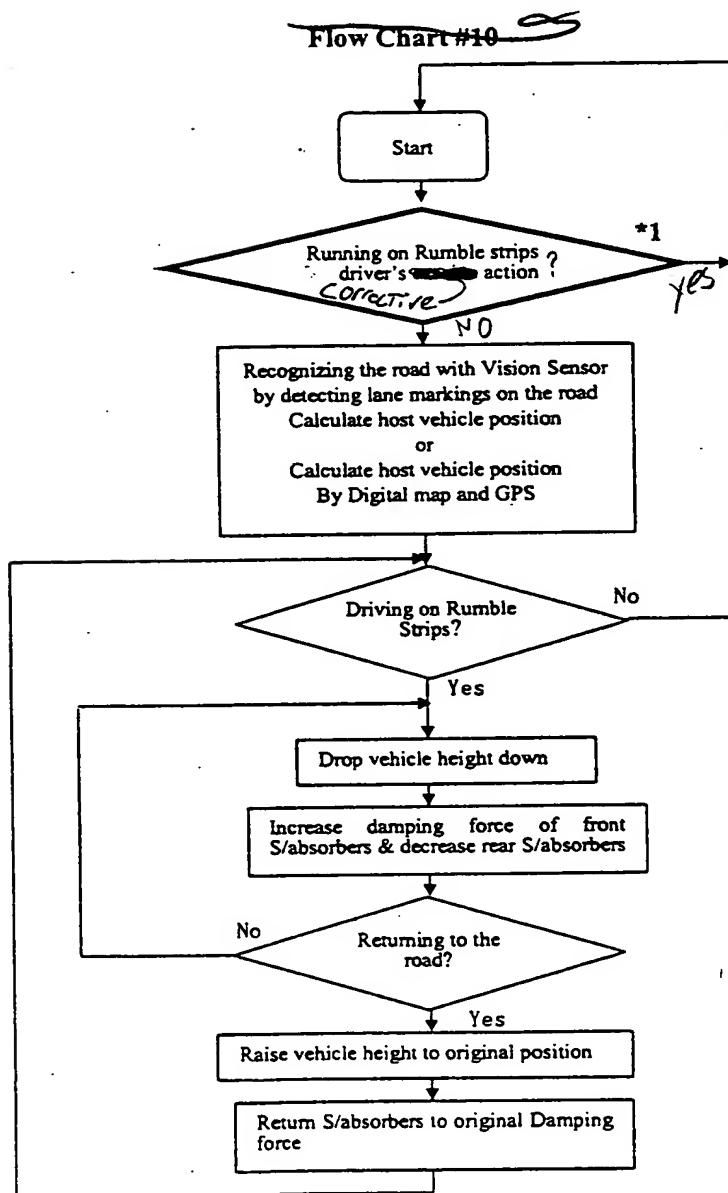


Fig. 25